

STATE OF NEW YORK  
PUBLIC SERVICE COMMISSION

---

Proceeding on Motion of the Commission  
Regarding an Energy Efficiency Portfolio  
Standard

Case 07-M-0548

---

**Comments of the New York State  
Energy Research and Development Authority  
SAPA I.D. No. PSC-27-11-00005-P**

The New York State Energy Research and Development Authority (NYSERDA) submits these comments in response to the Proposed Rulemaking as published in the *State Register* on July 6, 2011. As requested by Administrative Law Judge Stegemoeller on July 6, 2011, NYSERDA has organized its comments in the order in which subjects were presented in the Department of Public Service (DPS) White Paper.

NYSERDA commends the DPS Staff for its efforts in distilling the issues in its White Paper as they relate to the reauthorization and modification of programs authorized under the Energy Efficiency Portfolio Standard (EEPS). NYSERDA looks forward to continuing to work closely with DPS Staff and EEPS Program Administrators (PAs) to provide valuable opportunities to New York's consumers to save energy and improve the environment while furthering the State's 15x15 energy efficiency goal.

**REAUTHORIZATION OF PROGRAMS AND SURCHARGES**

**NYSERDA Supports the Current EEPS Target of Reducing Electric Consumption by 15% From Projected 2015 Levels**

NYSERDA strongly supports reauthorization of the EEPS portfolio and maintaining current funding levels in order to meet the State's goal of reducing electric energy consumption by 15% from projected 2015 levels as proposed in the White Paper. NYSERDA concurs with the White Paper recommendation that the majority of programs should be continued on a multi-year basis. EEPS program reauthorization at the earliest possible date this Fall would send a critically needed signal to contractors and potential participants. Program planning, implementation details, procurement requirements and updating applications and outreach materials by PAs will take time. As such, progress toward goals achievement could be slowed or disrupted if the Commission's EEPS decision were to occur in the last weeks of 2011. Reauthorization and program continuation is needed to support continued customer and contractor engagement, particularly since energy efficiency investments are often planned, designed and executed over a multi-year timeframe.

However, NYSERDA also believes that achievement of EEPS targets is hampered by administrative requirements that add to program costs and contribute to program delay. While the slow initial progress towards achievement of the interim EEPS targets might be attributed to the lengthy process that the Commission engaged in to review and approve the large number of EEPS programs. While that process

did indeed contribute to the slow startup of some EEPS programs, it would be a mistake to attribute program implementation delays entirely, or even primarily, to the Commission's review process. Based upon experience to date in implementing the EEPS programs, NYSERDA believes there are other, equally important factors that are frustrating the effective, timely and efficient implementation of many EEPS programs. These factors include the imposition of the Technical Manual; the application of the Total Resource Cost Test (TRC) during implementation and at the measure level; unclear application of some rules and processes; and program overlap. In addition, modifying programs is a cumbersome process that requires PAs to routinely return for Commission orders to adjust program funding or to make certain relatively routine program implementation changes. NYSERDA respectfully recommends that the Commission consider alternatives to current EEPS regulatory processes, including further delegation to DPS Staff, to the extent such alternatives fulfill the necessary oversight responsibilities of the Commission.

These factors need to be considered and addressed by the Commission. Depending upon what, if any, steps the Commission elects to take to address these factors, modifications in the Commission's timetable to achieve its EEPS target may be necessary.

#### Lessons Learned Should Inform the Future EEPS Efforts

NYSERDA firmly believes that many of the challenges that arose during the initial phase of EEPS implementation should be fully considered when establishing program targets and budgets for the period 2012-2015. In addition to the difficult task of review and approval of the large number of EEPS proposals, there are a number of additional factors that significantly increased the resources needed to administer EEPS Programs, including the development of and updates to the Technical Manual, TRC screening requirements during implementation and at the measure level, and program redundancy and overlap.

NYSERDA supports the plan identified in the White Paper to refine program budgets and targets in the upcoming months. NYSERDA suggests a process and schedule be developed as soon as practicable to effectuate these refinements while maintaining momentum. NYSERDA believes that it would be appropriate to include an opportunity for PAs to propose targets and budgets by program based on their knowledge and understanding of EEPS rules and current market conditions. NYSERDA strongly urges the Commission to take action as soon as possible in the early Fall to reauthorize programs so that continuity can be maintained in early 2012.

The White Paper recommends several factors to be considered in the establishment of new program targets and budgets. NYSERDA addresses each of these factors below.

*(a) The starting point for any individual program target should be the 2011 target after it is restated or reduced to reflect necessary adjustments due to implementation of the Technical Manual and the result of any reduction or restatement restated in response to various program-specific petitions pending before the Commission.*

NYSERDA agrees that the starting point for individual program targets should be based on 2011 targets, after consideration of Order and Operating Plan timelines, and including a reflection of the necessary adjustments due to the implementation of the Technical Manual and taking into account the resolution of any pending EEPS Petitions.

*(b) Individual program targets going forward should reflect reasonably achievable annual levels of targets and budgets informed by the most recent annual rate of spending and performance and new projections of post-start-up performance rates.*

NYSERDA recommends this definition be broadened to look at the most recent annual rate of committed spending and performance to address programs with long lead times. In addition to targets based on rates of spending and performance and post-start-up considerations, the development of targets should also be informed by the extent to which programs in the same sector and service territory require substantially different levels of ratepayer funding to achieve an equivalent level of kWh or Dth reduction. Consideration also needs to be given to the balance between gas and electric funding and associated targets for those programs that are delivering both types of savings in an integrated fashion.

*(c) Individual targets and budgets going forward should not include a global rollover of unachieved savings and unspent funds from the 2008-2011 time period.*

NYSERDA believes that, in general, program funds from the 2008-2011 period should be rolled over. NYSERDA agrees, however, that not all program funds should be rolled over, particularly in the case of “negative” outliers. The factors discussed above resulted in some programs underperforming and funds from such programs should not necessarily be reallocated. In addition, for programs with long lead times, future targets and budgets should include consideration for applications received, for which funding has not yet been committed.

*(d) Unspent and uncommitted funds from the 2008-2011 time period should either be (i) budgeted as supplemental funding for specific successful individual programs that are exceeding their 2011 budgeted performance level; (ii) budgeted for new specific individual programs for the program administrator to meet unmet needs (such as new "block-bidding" programs); or (iii) be available to the program administrator for supplementing any of its programs that are achieving above 100% of targets, unless or until the Commission directs another use of the funds.*

In response to the discussion in the White Paper (on page 15), NYSERDA recommends, as indicated above, that with the exception of “negative” outliers, unspent and uncommitted funds remain with the program to which they have been allocated and that commensurate adjustments be made to targets, as warranted. NYSERDA provides an expanded discussion with regard to program outliers below in these comments. NYSERDA also recommends that a clear process and timeline be developed and broadly disseminated to all PAs that will indicate the PAs responsibilities for notification and approval prior to proceeding with the transfer of these funds between programs.

Given the relatively late start for most EEPS programs, the need to balance budgets and targets reflective of sector and territory equity concerns, differences in program design, and substantial differences in \$/MWh and \$/Dth saved between PAs, NYSERDA urges caution in how and when funding and target shifts occur, particularly between PAs or sectors. This can be extremely disruptive in the market and cause ill-will with customers whose plans to participate in a given program are derailed by reallocation of program budgets. For these reasons, NYSERDA believes it is important for PAs to be afforded the opportunity to provide input during any process that may result in funding or target shifts.

*(e) Targets and funding of programs in aggregate should be modulated to create a trajectory that will reasonably lead to achievement of the Commission's jurisdictional goal of 7.7 million MWh by 2015.*

NYSERDA agrees that care must be taken by Staff and PAs to design programs that will ensure continuity in all markets and geographic areas of EEPS programs through the end of 2015. Programs that are spending funds more quickly than anticipated should be scrutinized to determine whether the incentives are too rich and whether energy savings per dollar spent is adequate relative to other, similar programs. By modulating incentives or other program elements such as outreach and marketing, a program may be able to achieve or exceed its goals at a lower cost to ratepayers.

Consideration should be given to the most cost-effective use of ratepayer dollars, such as within each sector. The programs that are achieving savings at a lower total \$/MWh or \$/Dth by offering a market-appropriate incentive level (or by keeping administration and marketing costs low) should be viewed more favorably for receipt of additional funding, as opposed to programs that are meeting targets by offering rich incentives. Demonstration of efficient use of ratepayer dollars should be considered in allowing a program that is reasonably close but shy of its target to be considered for supplemental funding.

NYSERDA agrees with the White Paper recommendation (on page 16) that annual targets for electric savings should be used as a planning and evaluation tool. As noted, many factors can have an effect on program implementation in the near-term, such as decisions that will be made on the Technical Manual, the impact of the economy on program implementation as well as other program issues and considerations. Designing programs around “hard” annual targets may not adequately consider various market dynamics and changes in program design that may occur. Also, near-term decisions based on progress towards such targets may not account for the fact that longer-term targets may still be achievable, or that short-term decisions on programs necessarily advance the overall portfolio goals.

NYSERDA supports the approach that examining the entire EEPS portfolio on a periodic basis will best assess the performance of the overall EEPS effort. Once assessed on a portfolio level, a more granular understanding of the dynamics of individual program performance can be analyzed through program evaluations. These evaluations would serve to identify where additional program opportunities exist, or

where underperforming programs can be re-focused to provide greater contributions to the portfolio targets.

If new programs and additional funding are deemed necessary by the Commission, NYSERDA supports the use of the \$44 million that could be available based on the projection of costs in the 2008 Order. NYSERDA supports the use of funding currently allocated to “negative” outlier programs only after PAs are provided the opportunity to reallocate those funds within their EEPS portfolio as described in the White Paper (see page 22). NYSERDA does not support using the funds resulting from the lag between collections and cash outlays.

#### Program Administrator Input Continues to be Important to Outlier Determinations

NYSERDA agrees with the White Paper (discussion beginning on page 17), that continuous reevaluation and improvement is key to developing an EEPS program portfolio that effectively addresses the needs of a variety of markets and achieves its overall goals. NYSERDA appreciates the DPS Staff’s efforts to define current program outliers and apply a consistent methodology to determine both “positive” and “negative” outlier programs. By proposing a process to evaluate the success of certain programs and applying those elements to other programs, Staff has established a mechanism for collaboration among PAs, although the replication of successful programs should be approached in a manner that minimizes additional program overlap.

In response to the White Paper, Consolidated Edison, Orange and Rockland Utilities, and Central Hudson presented a number of corrections and revisions to tables showing key performance metrics. Staff responded to some of these corrections with updates to a number of elements in White Paper Appendix tables. Staff’s response did not update tables based on more recent forecasts and indicated that it is reasonable to wait until all comments have been received so that any revisions can then be presented to the Commission in a comprehensive manner. NYSERDA includes its specific corrections and revisions to the outlier tables that appear in the White Paper (page 19), as well as to relevant portions of Appendix 1 in these Comments (see page 26).

NYSERDA supports the guidance offered with regard to the Multifamily Geothermal Heat Pump Program. While NYSERDA remains confident that geothermal heat pumps can be an important technology contributing towards the goals of EEPS, the application of this technology toward electricity-saving improvements under the EEPS regulatory structure has proven too restrictive. Should the Commission agree that geothermal heat pumps be included in the EEPS portfolio, NYSERDA recommends continuing this program with gas funds from the Multifamily Performance Program (MPP), which currently has available gas funding, and reallocating the electric funds from the geothermal program to the MPP, which would greatly benefit from additional electric funding.

NYSERDA suggests caution regarding the White Paper recommendation to direct the utilities to propose block bidding programs. The goal for such programs should be to drive larger cost-effective projects at a ratepayer investment level (\$/MWH or \$/Dth) lower than comparable opportunities available through other existing EEPS programs.

NYSERDA appreciates Staff's recognition of the success of the Agricultural Energy Efficiency Program. The Program experienced a successful launch in January 2011 and closed due to oversubscription two months later. In response to stakeholder interest from the agriculture community, NYSERDA recommends continued funding with the remaining oversubscribed applications funded at a 75% cost share, and new applications under a reopened Program funded at a 50% cost share. If continued funding is provided, a stakeholder collaborative will be held to review the appropriate cost share and to provide additional program input. NYSERDA's suggested reduction in program incentives is consistent with Staff recommendations that the incentive levels for oversubscribed or "positive" outlier programs be modified as a way to modulate participation in the program and ensure that program services are available through 2015.

#### Cost-Effectiveness Screening Should Be Performed at the EEPS Program and Portfolio Levels

NYSERDA understands and supports the Commission's concern that energy efficiency programs be cost-effective and a beneficial use of ratepayer funding. However, applying the TRC at the measure level during program implementation has led to missed opportunities to achieve more substantial and deeper energy efficiency savings, particularly when added to other project screening thresholds imposed at the time of customer application.<sup>1</sup> The White Paper review of alternatives does not include discussion of when and how TRC screening is required. NYSERDA recommends that the current requirement for TRC screening at measure and project levels prior to approving an EEPS project be discontinued. At best, TRC screening during implementation at the measure level imposes greater costs while providing uncertain benefits.

NYSERDA's experience with measure-level TRC screening to date has increased administrative and technical review costs; created uncertainty for the customer; dampened participation; and constrained support for new or under-used energy-saving technologies where costs at present are be relatively high, but may be expected to become cost-effective with higher adoption rates. It is also important to recognize that some measures achieve higher levels of energy savings when bundled together. By screening each measure in a project individually, the TRC fails to account for all interactive benefits among measures in an energy efficiency project, thereby undervaluing the total potential benefit of the measure.

The EEPS requirement that the TRC be applied at the individual measure and project level results in lengthier program applications for participants and longer review in order to collect accurate costs – at a point of time in project development when costs and benefits are subject to change. This increases administrative and program implementation costs, and leads to potential gaming of cost estimates by customers or installers. Customer uncertainty about measure incentives and project eligibility makes it more difficult for energy service companies (ESCOs) to sell projects and creates customer frustration, which may diminish future program value. Further, many of NYSERDA's programs are designed to look

---

<sup>1</sup> This includes requirements for commercial and industrial projects that incentives not exceed an amount that would create a less-than-one-year project payback and one-half year for industrial customers, and frequently, program caps on the percent of project cost supported by incentives. For example, a number of utility small commercial direct install programs offer incentives up to 70% of project cost, and NYSERDA typically caps incentives at 50% of project cost.

at whole buildings and systems-based projects to maximize savings opportunities. With these programmatic approaches, measures that would contribute to additional savings are excluded when they cannot pass the TRC individually, leading to a lost opportunity to capture comprehensive savings.

The White Paper (on pages 25-26) reviews a number of alternatives to the TRC when determining the cost-effectiveness of EEPS programs.<sup>2</sup> NYSERDA supports the continued use of the TRC for assessing cost-effectiveness at the program and portfolio levels, and recommends that:

- the TRC be applied at the program and portfolio level and PAs be required to monitor programs and report TRC performance annually;
- PA's have the flexibility to screen for cost-effectiveness at the measure or project level at their discretion during program implementation;
- if screening is required during implementation, it be limited to cases where ratepayer dollars fund more than 50% of the project cost; and
- screening exceptions be allowed for certain programs that face significant implementation challenges, such as for low-income programs.

#### Weight Should Be Given to Additional Measures of Cost-Effectiveness

NYSERDA suggests that passing the TRC is only one measure of program cost-effectiveness. Accounting for the cost to ratepayers on a dollar per MWh or Dth basis bears recognition as a means of lowering the average cost to ratepayers per unit of efficiency gained. Currently, the suite of approved EEPS electric programs Statewide has an average ratepayer cost of \$177/MWh, while NYSERDA's approved programs have an average ratepayer cost of \$116/MWh.<sup>3</sup>

NYSERDA remains committed to working with DPS Staff and other PAs to review and clarify recommended changes to benefit cost screening.

---

<sup>2</sup> The White Paper identifies TRC as the most commonly used benefit/cost test in the utility industry and the National Action Plan for Energy Efficiency's paper *Understanding Cost-Effectiveness of Energy Efficiency Programs* (<http://www.epa.gov/cleanenergy/documents/suca/cost-effectiveness.pdf>) shows the TRC or closely-related Societal Cost Test (SCT) as the most commonly used primary benefit/cost test by states.

However, application of TRC at the measure level during implementation is not a common practice nationwide. NYSERDA reviewed the cost-effectiveness screening practices of more than 20 U.S. states with energy efficiency programs, and did not find any jurisdictions that require TRC screening at the site-specific measure level during implementation. Preliminary findings indicate that the states that require TRC screening at the measure level do so for planning or evaluation purposes only. Applying TRC at the measure level during implementation adds to program administrator and participant costs and slows application processing. Information available at the time of customer application is frequently limited such that cost and savings estimates are preliminary.

<sup>3</sup> EEPS gas program funding has a smaller range: statewide, approved programs average \$33/Dth, while NYSERDA approved programs average \$31/Dth. NYSERDA is responsible for 68% of the approved electric programs' statewide MWh target and 56% of the approved gas programs' statewide Dth target.

### A Variety of Program Delivery Options are Needed to Meet the State's Aggressive Energy Efficiency Goals

NYSERDA agrees with DPS Staff's support for continuing a variety of program delivery options (White Paper, page 34). It is important to recognize that each option is an appropriate tool that can be tailored to target a specific segment of a market. NYSERDA suggests that performance-based programs be included as an additional program delivery option. Examples of current EEPs –funded performance-based programs include NYSERDA's Existing Facilities, Industrial and Process Efficiency, and New Construction Programs. These programs offset the first cost of energy efficiency improvements on the basis of a "per unit" of energy saved. These programs also require measurement and verification or commissioning on large projects and adjust payment according to actual energy efficiency resources acquired. Strengths of this program design include a ceiling on maximum ratepayer cost per unit of energy saved (\$/MWh) and measured and verified performance or commissioning that strengthens realization rates and provides higher confidence in reported energy savings.

### Properly Designed Audit Programs Can Result in Significant Energy Savings

NYSERDA strongly urges the preservation of stand-alone audit programs. NYSERDA's FlexTech Program is an exception to the White Paper's assertion (on page 33) that "audits alone have a poor track record of leading to implementation of energy efficiency measures." FlexTech provides basic audits for small businesses, but it primarily offers customized, objective, and detailed energy studies that lead to a proven high rate of customer implementation. Impact evaluation of the NYSERDA FlexTech Program has consistently shown a high installation rate of energy efficiency savings recommendations.

While similar energy study programs across the nation have found installation results ranging from 10% to 45%,<sup>4</sup> finalization of the most recent FlexTech Impact Evaluation is occurring and the evaluation team is reporting a long-term measure adoption rate of 65% of recommended energy savings.<sup>5</sup> This result is consistent with the past two FlexTech Measurement and Verification Evaluations completed in 2005<sup>6</sup> and 2007.<sup>7</sup> Based on the measure adoption rate (MAR) findings, FlexTech is one of the lowest ratepayer cost resource acquisition EEPs Programs. The FlexTech Impact Evaluation is focused on medium-to-large commercial and industrial participants. The recent evaluation team found these participants represent 97% of the recommended energy savings in the program studies and audits.<sup>8</sup> NYSERDA concurs with the DPS assessment that a low MAR probably exists for audit programs for small customers.

---

<sup>4</sup> Megdal & Associates, Energy & Resource Solutions, and West Hill Energy & Computing, NYSERDA Flexible Technical Assistance Program Impact Evaluation Focused Report on Measure Adoption Rate (Powerpoint presentation, April 7, 2011). Slide 21

<sup>5</sup> Megdal & Associates, Energy & Resource Solutions, and West Hill Energy & Computing, NYSERDA FlexTech Program Evaluation Draft Report, prepared for NYSERDA, July 22, 2011. p. 1-4.

<sup>6</sup> Nexant, M&V Evaluation Technical Assistance Program, prepared for NYSERDA, June 2005. p. 15.

<sup>7</sup> Nexant, M&V Evaluation Technical Assistance Program, prepared for NYSERDA, June 2007. p. 14.

<sup>8</sup> Megdal & Associates, Energy & Resource Solutions, and West Hill Energy & Computing, NYSERDA Flexible Technical Assistance Program Impact Evaluation Focused Report on Measure Adoption Rate (Powerpoint presentation, April 7, 2011). Slide 6.



### Programs Designed to Achieve “Deep Savings” Are More Cost-Effective in the Long Term

The White Paper defines “deep savings” programs as those designed to identify a comprehensive range of interacting measures at a site, executing as many of them as possible in one project to capture the synergies among the individual measures while capturing as much energy savings as possible in one customer transaction. This approach is also commonly referred to as a “comprehensive program.” By analyzing the building as a system, comprehensive programs are able to achieve deeper savings than other program delivery options. Deep savings programs attempt to capture more savings per program participant, whereas “shallow” programs focus on capturing only the most cost-effective measures over a larger group of program participants. Most programs can be designed based on either a deep or shallow approach, or incorporate customer interaction to assess the appropriate extent of savings at a site.<sup>9</sup> Deep savings programs do not necessarily mean a comprehensive approach is taken, yet comprehensive programs are particularly effective at achieving deep savings.

NYSERDA agrees with the assessment that there is value in achieving synergies. The White Paper recognizes the value that comprehensive “deep savings” programs can have in addressing New York's energy efficiency needs and NYSERDA supports their continued role in the EEPs portfolio. NYSERDA also believes that it is important to design energy efficiency program portfolios that offer a mix of programs and, based on its extensive and successful program implementation of SBC and EEPs programs, NYSERDA is best-suited to offer comprehensive “deep savings” programs.

However, NYSERDA believes that the statement (White Paper, page 34) that these projects “are less cost-effective than applying more narrowly targeted measures,” overemphasizes near-term energy savings and could jeopardize the State's ability to meet aggressive savings targets over the long-term. Comprehensive “deep savings” programs are more cost-effective over the long term by ensuring that all available savings at a given site are achieved in the most cost-effective way. The American Council for an Energy-Efficient Economy (ACEEE) contends that developing programs capable of delivering “deep savings” first, followed by broad participation is a necessary strategy in fulfilling energy efficiency portfolio standards in states with long-established energy efficiency programs.

### Custom Programs Are an Important EEPs Program Delivery Option

The program delivery options outlined in the White Paper do not explicitly discuss the use of custom programs. The Technical Manual recognizes four types of Custom Measures.<sup>10</sup> Custom approaches differ from prescriptive approaches in that a custom approach evaluates the specific needs of the building in recommending a work scope rather than relying on a predetermined list of measures. Comprehensive programs are by their nature custom programs as they require site-specific modeling; however, custom approaches can also be used in each of the other four program delivery options. Many commercial and industrial customers may elect to upgrade a single piece of energy efficiency equipment or one system in

---

<sup>9</sup> For example, an audit program may result in the adoption of a single energy efficiency measure, or numerous measures—or a rebate program could offer a rebate for one measure or multiple.

<sup>10</sup> *The New York Standard Approach for Estimating Energy Savings from Energy Efficiency Programs – Residential, Multi-Family and Commercial/Industrial Measures*, dated October 15, 2010 was approved by the Commission in its *Order Approving Consolidation and Revision of Technical Manuals* in Case 07-M-0548 on October 18, 2010.

the manufacturing process or building. These types of efforts do not necessarily fit the White Paper definition of “deep” savings, but support a custom, or performance-based measure approach to energy efficiency improvements.

#### A Flexible Approach to Geographic Equity Should Be Maintained

The White Paper (on page 35) states that the Commission has aimed for geographic equity without invoking a rigid standard. NYSERDA reiterates previously-stated positions that flexibility in program progress, and not a rigid standard, is the best approach. NYSERDA’s Statewide programs are designed to provide opportunities to ratepayers from all contributing utility service territories, however, market response to the program offerings is not always directly aligned with utility service territories. As the White Paper suggests, the system benefits realized by EEPS implementation inure to all ratepayers, and thus a flexible approach to geographic equity is justified. To ensure that program opportunities are best aligned with specific service territory characteristics, NYSERDA adjusts program offerings and marketing – within the allowances provided by the EEPS Orders – in order to provide programs that are equally attractive and accessible in all geographic areas of the State.

NYSERDA has addressed additional sector equity issues in its discussion below regarding program opportunity in the low-income sector.

#### EEPS Lighting Program Efforts Should Be Modified In Response to Market Changes

The White Paper (on page 36) recognizes that implementation of new federal lighting standards will have a significant impact during the 2012-2015 timeframe on EEPS electric programs, many of which include lighting as an eligible measure.<sup>11</sup> It also acknowledges the success that NYSERDA and others have had in transforming the market for lighting technologies and questions the need for continuation of some forms of lighting programs. Even in light of the new federal lighting standards, NYSERDA believes that an upstream EEPS lighting program is vital to gain market acceptance of those new technologies that promise even greater energy savings. As such, NYSERDA plans to modify the existing Statewide Residential Point-of-Sale Lighting Program to focus on LEDs, which have a large potential for energy savings in common lighting applications, beyond their typical use for holiday lighting, flashlights, and nightlights, as well as exterior and specialty CFL bulbs, that still represent a considerable portion of the remaining CFL potential in New York households. Specialty CFLs are a proven technology that is under-used.<sup>12</sup> Specialty CFLs account for only 5% of sockets in the State and 8% in New York City. About

---

<sup>11</sup> The Energy Independence and Security Act of 2007 (EISA) establishes new efficacy standards for general service lighting. These changes in standards will result in the phasing out of the current standard incandescent lamps during 2012-2014, but does not entirely ban incandescent bulbs. Many compliant incandescent lamps and specialty lighting products that are exempt from the new standards will be readily available. EISA legislation will be phased in over a three-year period and as a result, customers can choose from higher efficiency incandescent bulbs, EISA-compliant halogen and halogen IR, compact fluorescent lamps (CFLs), and solid-state lighting (SSL), such as light emitting diodes (LEDs). While the conventional spiral CFL is more common and widely available across New York, there is still a need to significantly increase the market penetration of exterior and specialty CFLs.

<sup>12</sup> Globes, dimmable CFLs and covered A-lamps are specialty bulbs. Specialty bulbs comprise a small but important portion of the remaining CFL potential in households in New York. Moreover, A-shaped specialty CFLs could fit in most of the sockets currently filled with A-shaped incandescent bulbs.

two-thirds of the sockets in the State and three-fifths of sockets in New York City contain an incandescent or halogen bulb that could be converted to CFLs.

Solid state lighting (SSL), or LED, technology is promising, but its widespread acceptance as a replacement bulb may be longer term. SSL technology is advancing rapidly but is still too costly when compared to other available lighting options, making this an ideal technology to focus upstream activities on in the 2012-2015 timeframe. SSL also suffers from great variation in quality and reliability.<sup>13</sup> The SSL A lamp has enormous potential for socket penetration, however, the cost for such ENERGY STAR bulbs is about \$40, excluding subsidies -- too great a barrier for common acceptance.

Continuing to support lighting technology specialty and niche applications, combined with broader market applications, where appropriate, will accelerate market acceptance of underused and emerging high-performance products, which, in turn, supports the development of the next generation of new and improved technologies. As the White Paper suggests, NYSERDA welcomes further discussion through the Implementation Advisory Group on this topic.

#### EEPS Low-Income Funding Should Be Increased

NYSERDA's program experience continues to show that, if not for program intervention, many low and low-to-moderate income households would forgo necessary efficiency upgrades because they cannot afford the upfront investment. As many low and low-to-moderate income households contain older, inefficient appliances and inadequate air sealing and insulation, these dwellings represent a substantial opportunity for energy efficiency within the residential sector and should not necessarily be considered a tradeoff of savings achievement for social benefit.

The Commission established its intent for increased funding for the low-income sector post-2011 in its May 2009 *Order Establishing Targets and Standards for Natural Gas Efficiency Programs*, which states "Because stimulus funding is heavily weighted towards low-income programs, the targets established in this Order are less weighted toward low-income programs through 2011 and more heavily weighted towards low-income programs following 2011."<sup>14</sup>

While the impact of ARRA funding for the Weatherization Assistance Program has been significant, it is important to ensure that the momentum in meeting energy savings and sector equity is maintained. NYSERDA anticipates that there will be a much higher demand for the EEPS-funded low-income programs as other sources of energy efficiency funding are reduced or become unavailable. ARRA funding also expanded the State's green collar workforce and many contractors invested in training and

---

<sup>13</sup> ENERGY STAR released its guidelines for replacement bulbs in August of 2010 which will greatly improve general reliability and quality. However the testing requirement assures a time lag in achieving compliant bulbs. Although ENERGY STAR-compliant parabolic aluminized reflector (PAR), multi-faceted reflector (MR), and globe bulbs are more prevalent, the most highly anticipated product is the SSL replacement for the traditional omni-directional 60 watt A lamp. As of May 12, 2011, only 3 LED A-style bulbs meet the ENERGY STAR criteria and are listed on the ENERGYSTAR.gov website. However, more LED models are expected to be approved as the testing and labeling process for ENERGY STAR qualified LEDs has recently been streamlined (May 2011).

<sup>14</sup> Case 07-M-0548, Order Establishing Targets and Standards for Natural Gas Efficiency Programs, May 19, 2009, p3.

equipment to support the public policy goals associated with ARRA. It is important that the State leverages this valuable asset.

Under SBC III, funding for programs targeting households with incomes < 80% SMI was approximately 60% of the residential portfolio. Additionally, this sector received funding during the SBC III period through utility rate case settlements, increasing the funding to this sector.<sup>15</sup> However, for EEPS, funding for this sector was reduced to approximately 20% of the EEPS statewide residential portfolio, due to the anticipated impact of ARRA funds. NYSERDA supports a funding allocation for this sector that provides an equitable distribution of funding across the residential portfolio. As approximately 40% of New York's households have incomes below 80% of SMI,<sup>16</sup> an allocation of up to 40% could be reasonable. However, given the current level of about 17%, NYSERDA believes a minimum allocation of 30% for the 2012-2015 timeframe to be appropriate and would allow demand for services in this sector to be met.

NYSERDA also recommends that it be allowed the flexibility to transfer funds from market-rate residential programs to lower-to-moderate-income programs based on demand for services, provided that the market rate programs are able to meet their EEPS savings targets. This flexibility would sustain the necessary momentum needed to meet the 15x15 goals, while continuing to meet sector demand. NYSERDA also supports a balance between gas and electric funding as these programs deliver both types of savings in an integrated fashion.

#### Low-Income Program Cost-Effectiveness and Leveraging

The current EEPS-funded low-income programs provide equity, system benefits, environmental justice, as well as solid energy savings that contribute to the State's 15x15 goals. NYSERDA continually assesses its low-income programs to identify and implement opportunities to increase cost-effectiveness, such as elimination of marginally cost-effective measures. As an added benefit, the current low-income programs are successfully leveraging other resources, thereby reducing EEPS program costs and increasing achievable energy savings. For example, NYSERDA and New York State Housing and Community Renewal have successfully combined EmPower New York and weatherization funds to complete larger projects.

The White Paper (on page 40) also seeks input on the extent to which funding levels of other programs should be taken into account in determining the appropriate level of funding between energy-consuming sectors. The challenge that relying on programs funded outside the scope of EEPS presents is that the funding often represents a single opportunity, is intermittent, or is subject to very specific stipulations.

---

<sup>15</sup> NYSERDA administered four utility-funded natural gas programs, through the EmPower NY, as a result of negotiated rate settlements. With the transition to EEPS, the amount of funding available to serve households in each utility territory was significantly decreased, as the EEPS program was administered statewide, across eleven gas utilities.

<sup>16</sup> According to Census data, about 2.2 million households at or below 60% SMI and another 700,000 households between 60% and 80% SMI.

### Interruptible Gas Customers Should Be Eligible EEPS Participants

NYSERDA supports the inclusion of interruptible gas customers as EEPS-eligible participants and recommends that the scope of that which is considered in the White Paper be widened to include not only multifamily buildings, but also commercial and industrial customers. NYSERDA agrees that further research should be undertaken and directed by the Implementation Advisory Group (IAG) subcommittee as recommended in the White Paper (on page 43).

A significant portion of the multifamily building market in New York City is comprised of large, interruptible gas customers and research has shown that interruptible gas customers are often some of the largest gas consumers in New York City. The facilities represented by this market sector present a significant opportunity for energy efficiency, including HVAC, air sealing, lighting, and in-unit energy savings measures. Reducing energy consumption would moderate the overall costs of energy needed to serve these buildings and alleviate stress on the natural gas delivery system, both of which are underlying objectives supporting interruptible gas tariffs. Thus, on a broad scale, the purpose for providing energy efficiency opportunities synchronizes with the need for interruptible service.

An additional consideration to support the inclusion of interruptible customers is the required phase-out of #4 and #6 oil for heating purposes in New York City. There are roughly 10,000 buildings in New York City that burn only #4 or #6 heating oil. New regulations will ban both of these fuels beginning with a phase-out of #6 in 2015. While fuel switching of this type is commendable from a public health perspective, improving system efficiencies should also be encouraged. Upon switching to cleaner fuels (including #2 oil, biofuels, and natural gas), the ability of interruptible customers to participate in energy efficiency programs captures unique opportunities to improve on-site fuel consumption, as well as the system benefits of improved throughput on the gas system. Capturing this synergy further ensures that efficiency is considered when equipment is replaced for fuel switching purposes.

### Additional Research Should be Given to Self-Design Programs Prior to Adoption in New York

As noted in the White Paper, the premise of allowing large commercial and industrial customers to design their own efficiency programs and bank SBC payments toward their funding has potential benefits as well as drawbacks. At this time, NYSERDA suggests that this concept warrants further exploration, such as through a stakeholder group, to consider the implications in the context of New York's energy efficiency program portfolios.

The American Council for an Energy Efficient Economy recently presented a peer-reviewed paper as part of its 2011 Summer Study on Energy Efficiency in Industry that examined self-direct programs throughout the U.S.<sup>17</sup> The Paper reviewed the types of self-direct programs that have been attempted and concluded that there is insufficient data on program success:

---

<sup>17</sup> Chittum, et al., "What You Don't Know May Hurt You: Lessons from Today's Large Customer Self-Direct Programs," American Council for an Energy Efficiency Economy: 2011 Summer Study on Energy Efficiency in Industry.

“The assumptions on which self-direct programs are based are at best not proven and at worst not correct. Self-direct programs may indeed be an effective way to acquire energy savings from the largest customers, but they also may not be. From a policy perspective, it is alarming that self-direct programs have become such popular policies around the country, because the data to support their existence simply does not exist.”

The Paper further noted data gaps, including several important metrics that need to be collected and analyzed to better understand how self-direct programs operate. These include: calculations of cost of saved energy in self-direct projects; calculations of cost-effectiveness of self-direct projects; comparisons of energy savings of similar companies operating within self-direct and public benefit-funded programs; and measuring of actual energy savings in self-direct projects as opposed to simply tracking number of dollars invested.

NYSERDA believes that further consideration of self-directed programs must include the following:

- the energy efficiency potential for customers who currently do not pay into the SBC;
- guidelines for PAs in addressing customers who pay a partial SBC surcharge;
- the potential merit in providing an option to participate for non-SBC-paying customers that presents a reasonable business case for the customer and is equitable to ratepayers;
- the potential loss to self-designed customers and policymakers of the value of technical assistance, evaluation, measurement and verification, installation support, information on emerging technologies and other value-added support delivered through EEPS programs;
- guidance on savings attribution for self-direct program; and
- establishing the precision and confidence required in order for savings to be useful for system planning purposes.

## PROGRAM MANAGEMENT

### EEPS Program Collections Should Not Be Amortized

NYSERDA strongly recommends against the implementation of a cost recovery structure that would result in multi-year amortization of EEPS program collections, rather than expensing EEPS program allocations in the year such costs are realized. While NYSERDA has not completed any calculations to assess the ratepayer impact of this shift in collections treatment, the policy rationale below, NYSERDA believes, provides strong evidence not to advance an amortization approach. Aside from these policy issues, there may also emerge program administration issues with respect to an amortization plan which should be further examined, including whether or how funds would be transferred to NYSERDA to support NYSERDA-administered EEPS programs if funds are not collected through the SBC from ratepayer bills.

First, as noted in the White Paper, amortization will certainly increase the overall cost of the EEPS program to ratepayers. Amortizing the cost of EEPS will result in interest costs, transactional costs, as well as other possible debt service costs that are not currently associated with the program. In addition, it remains unclear what the effect of incurring additional debt will be on each utility balance sheet. There may be unintended consequences of increasing debt to the utility, such as pressure on debt ratings, which

may further aggravate the rate requirements that are otherwise needed to meet the costs of the program or which may affect general utility operations. Additional debt requirements incurred as a result of amortization of this program will likely diminish the system benefits in wholesale price reduction and other economic benefits that might otherwise inure from the program, such as avoided transmission and distribution (T&D) costs. The argument that there exists intergenerational inequity with the program that is currently expensed – that is current ratepayers are paying today for benefits that will take place over several years – does not seem overly compelling. Energy efficiency benefits demonstrate nearly immediate benefit upon installation and operation of the efficiency equipment; thus, current ratepayers experience a level of system benefit in the near-term. Also, the average life of EEPS-supported measures is considerably shorter than other utility investments, such as very long-lived transmission and distribution system investments. As such, more current ratepayers will likely realize the majority of the economic benefits of the efficiency investment. The economic rationale for amortization for intergenerational equity reasons for energy efficiency programs does not equate with the rationale to amortize the cost of capital intensive, very long-lived T&D system investment.

Second, NYSERDA recommends that it be determined as to whether these costs can be appropriately amortized pursuant to accepted accounting standards and rules. The White Paper correctly notes that an amortization plan would create a new regulatory asset for the utility. However, with the EEPS program, any new equipment that is installed as a result of the program belongs to the project host, not the utility. Unlike amortized investments in the T&D system, the utility will never be the owner of the “hard” asset. While not all regulatory assets require underlying infrastructure or equipment to justify the creation of the obligation (such as a power purchase agreement), once the investment in energy efficiency is made, there is no remaining obligation to the utility, thereby putting into question the appropriateness of treatment as a regulatory asset.

Third, NYSERDA cautions against an approach that would permit utilities to earn a rate of return on the EEPS program. As the White Paper correctly notes, a risk is created for utilities to “spend to earn a return” which could negatively impair the continued development of an energy efficiency marketplace in a responsible and progressive manner. If funds are not spent on adequate administrative oversight or for quality assurance and quality control purposes, such a scenario could result in poor performing projects receiving program incentives. Higher numbers of projects that are unable to meet their energy savings targets could jeopardize the overall ability of the program to achieve its target goals. The more EEPS is tied to poorly performing projects, public support for efficiency erodes, and this could jeopardize the long-term credibility of energy efficiency in the marketplace generally.

For these reasons, NYSERDA recommends that the Commission continue its policy to treat cost recovery for EEPS program costs as expensed costs, and not to allow such costs to be amortized.

#### EEPS Program Eligibility Should Be Adjusted Going Forward

NYSERDA suggests that partial SBC customers should be eligible to participate in EEPS without pro-rating program incentives. There are many utility customers that are either exempt or partially exempt from contributing to the SBC by virtue of economic development zones, specific utility tariffs, economic

development electricity supply arrangements, status as a New York Power Authority retail customer, a direct exemption granted by the Commission, or by being an interruptible gas customer. However, many of these customers are contemplating energy efficiency projects that will result in substantial energy savings and have approached NYSERDA for assistance. It is NYSERDA's experience that many seek clarity on eligibility for program participation to help inform their energy project decisions.

Complete and partial exceptions to paying SBC by some of the largest customers greatly diminishes the potential impact of the program and increases the costs to the contributing ratepayers. For "partial payment" customers, there are inconsistencies in the way they can be served by PAs. For example, NYSERDA is required to prorate available incentives, while other PAs are not required to do so. These inconsistencies result in lower program participation and more frustration for potential customers, service providers, and stakeholders. It also contributes to less effective outreach, education, and marketing efforts. NYSERDA recommends that the Commission clarify that partial SBC customers are eligible to participate in EEPs and SBC programs with respect to all PA programs.

#### Maintaining Program Funding Continuity along with Limited Flexibility to Respond to Market Demand is Key

NYSERDA's experience in implementing energy efficiency programs has shown that funding continuity is key to the success of any program or portfolio. Predictability of funding is essential to attract private sector investment. Disruption, uncertainty or fluctuation in program funding can undermine market confidence and jeopardize the achievement of energy efficiency targets and program goals. Conversely, freely borrowing from future budgets risks the premature depletion of operating budgets before additional funding can be secured.

NYSERDA generally supports following the guidelines and procedures outlined in the White Paper, however, for some programs with long lead times (such as the New Construction Program), flexibility is needed to address and account for individual project changes and attrition and to encourage project commitments early in the process as many energy efficiency projects are implemented over multiple years.

NYSERDA supports the ability to roll uncommitted or unspent funds from one year into the subsequent year to further ensure that program continuity is not disrupted. NYSERDA also supports the notion of reporting MWh/MMbtu savings on a commitment-accrual basis, as well as on an installed project "acquired" basis as this dual-reporting provides a better representation of progress to date, particularly for programs with substantial lead times. Caution should be exercised as programs will continue to be evaluated on an acquired-basis only and the application of adjustment factors may affect the overall portfolio progress over time.

#### Efforts to Minimize Program Overlap Should be Heightened

NYSERDA firmly supports the opportunity to minimize the issues caused by overlapping programs in the next phase of EEPs. In doing so, NYSERDA believes new approaches should be explored that play to the strengths of each PA. The White Paper accurately reflects that program overlap leads to more



expensive programs, customer confusion, and potential customer inaction. Clearly, this is one of the more critical issues that should be resolved in the next phase of EEPs.

Simply requiring all PAs to offer the same incentives will not resolve these issues. Identical incentive levels would eliminate the customers “shopping” for the better deal, however it would not eliminate confusion in the market, competition amongst PAs, duplication and waste of marketing and outreach efforts, or energy savings being achieved at an overall higher cost to the ratepayer. As each PA has other costs associated with the delivery of programs, even if incentives are identical, the \$/MWh achieved varies dramatically when accounting for all program costs.

The White Paper states that program delineation is “not a promising approach.” NYSERDA strongly encourages DPS Staff to reevaluate this position and proposes cleanly delineating the services offered by the PAs, or clearly demarcating the types or sizes of customers that can receive these services from each of the PAs.

Once successful program delineation is achieved, collaboration between PAs can begin which could include shared goals, joint marketing, and common applications. Approaches are likely to differ by market sector and location. It has been NYSERDA's experience that true collaborations have the potential to produce great results; however, they work best when clear lines of responsibility are drawn between NYSERDA and the utilities.

True collaboration can only be achieved when program offerings are clearly differentiated to potential customers. When programs overlap, collaboration between PAs can cause confusion and be problematic. This is evidenced by the collaborative attempt between National Grid and NYSERDA for the healthcare sector. However, NYSERDA is successfully engaged with Consolidated Edison on a collaborative effort targeting data centers. In this example, the companies participate in joint marketing, however the projects are assigned to NYSERDA or Consolidated Edison based on project size. This delineation provides a clear line between PAs.

The role of NYSERDA and the utilities would reasonably be expected to be different between the residential and commercial sector. With regard to the commercial sector, as a Statewide administrator, NYSERDA's role is one in which it is appropriate to “push the envelope” of energy efficiency to higher levels, facilitating efforts that would not, or could not, be addressed by other PAs. Likewise, NYSERDA should not be involved in efforts that can be more effectively handled by other PAs.

Pushing the envelope to deeper levels of savings, and pushing energy efficiency to a whole new level can best be handled through performance-based offerings. In these programs, incentives are not paid until the efficiency measure savings are verified. Since deep savings projects that push the envelope of efficiency may result in uncertain savings in the early years, a performance-based program protects ratepayers against unrealized savings. Rebate programs are not performance-based and are more appropriate for serving the mass market of ratepayers looking for basic energy efficiency improvements. This leads to a two-prong approach to energy efficiency:

- A uniform Statewide program administered by NYSERDA for advanced energy retrofit opportunities targeting commercial and industrial customers with a peak electrical demand greater than 100 kW. Prescreened measures that can be demonstrated to appropriately raise efficiency levels could also be used. NYSERDA administers the only New Construction Program and recommends that practice be continued.
- Utility PA's would administer service territory-specific programs to provide rebates for basic energy retrofit opportunities targeting commercial and industrial customers with a peak electrical demand of 100 kW or less.

NYSERDA suggests a 100 kW cap to provide larger customers performance-based incentives for higher efficiency levels.

With regard to the residential sector, NYSERDA currently operates the only programs targeting the residential new construction and low-income market sectors. Of particular note is the collaborative relationship between NYSERDA and some of the PAs in the delivery of services to the low-income sector through the EmPower New York program. The utility PAs play an integral role by providing referrals of low-income, payment-troubled households to NYSERDA for services. These are examples of clear delineation in the market place that has worked well and NYSERDA recommends they continue and be expanded upon.

As was highlighted in the White Paper, the Home Performance with ENERGY STAR program offers comprehensive services to customers of one-to-four family homes. The vast majority of measures in this program are also eligible for a utility rebate. Due to the level of overlap caused by the current EEPS portfolio, NYSERDA, National Grid and Long Island Power Authority have undertaken the development of a customer incentive tool to aid consumers eligible for all three PA programs in determining the option that presents the most attractive financial benefit to the consumer. While this tool helps the consumer navigate the myriad of programs, the end result is that it produces the highest dollar per MWh or Dth outcome, as it is driven to determine the highest financial incentive for the customer. One possible solution is to differentiate the market based on type of program offering, for example comprehensive programs versus rebates packaged with joint marketing, to inform consumers of all available options. The multifamily sector provides another example of attempted delineation based on customer size which NYSERDA believes could be successful with some modifications.<sup>18</sup> Some multifamily buildings fall under the commercial utility rate class they are eligible to participate in commercial utility program offerings as well and NYSERDA's multifamily program. This creates confusion and increases the likelihood of double-funding of measures. In order to standardize offerings, reduce confusion and ensure the prevention of double-funding measures, multifamily buildings should either no longer be eligible to participate in commercial utility programs, or should also be eligible to participate in NYSERDA commercial programs where successful coordination has already been established between NYSERDA and the utilities. NYSERDA believes that services to this sector could be greatly improved by continuing

---

<sup>18</sup> The July 27, 2009 *Order Approving Multifamily Energy Efficiency Programs with Modifications* in Case 07-M-0548 provided a delineation of the market by buildings of 50 units or below being served by the utility and those above being served by NYSERDA. Subsequently, based on petitions from the utility companies, this threshold was raised to 75 units.

to work with the utility PAs to discuss common goals and objectives and to coordinate marketing strategies.

### EVALUATION, MONITORING AND VERIFICATION

The following EM&V issues were not addressed in the White Paper, but NYSERDA believes it is important for the Commission to consider them in the context of the reauthorization of EEPS programs.

#### Access to Allocated Evaluation Funds Beyond 2011 Is Necessary to Adequately Meet Evaluation Commitments

NYSERDA and DPS have agreed to multi-year evaluation plans for several major EEPS-funded programs. These plans are being implemented with the understanding that expenditure of current EEPS evaluation dollars will continue beyond the end of the current round of EEPS programs on December 31, 2011.<sup>19</sup> Several plans are also in the process of being updated or developed to include additional evaluation work beyond 2011. This is largely due to the retrospective nature of impact evaluation studies, which the White Paper correctly characterizes, noting that there must be sufficient data to produce meaningful results and that it often makes sense, from a statistical standpoint, to wait until a sufficient sample size exists that is truly representative of the completed projects.<sup>20</sup> If funds are not permitted to be expended beyond 2011 the evaluators' ability to meet specified sample precision and reliability standards, as specified by DPS Staff's Evaluation Plan Guidance for EEPS Program Administrators will be adversely affected.

#### A Policy for Applying Adjustment Factors Should Be Developed

A policy for applying adjustments factors should be developed by the Evaluation Advisory Group (EAG) to ensure consistency among PAs for reporting and measuring against goals and to better understand the use of the results. The current attention to the benefits of energy efficiency has created multiple messages to help engage energy consumers, making it increasingly more difficult to determine the impetus for change in energy behavior, and to assign the net impacts (energy savings) actually resulting from programs. Given the number of EEPS programs, some operating in the same utility service territory and offering similar or related incentives, consideration should be given to the appropriateness of single program evaluations, as is traditionally done in New York. Due to program overlap and Statewide marketing efforts, the interactive effects between programs and synergies and disbenefits in terms of overall market impacts may require a different approach to best address the true net effects of EEPS programs. In jurisdictions with more isolated program activities, standard methods (such as enhanced self report surveys) can reasonably be used to evaluate individual programs. NYSERDA suggests that the EAG further examine areas where programs may be jointly impacting the market and consider joint studies to assess net impacts. Examining market effects and spillover through joint studies may be warranted and could be more cost-effective than conducting separate studies which ultimately may be

---

<sup>19</sup> See Approved NYSERDA Evaluation Plans at: [http://www.dps.state.ny.us/EEPS\\_Evaluation.html](http://www.dps.state.ny.us/EEPS_Evaluation.html).

<sup>20</sup> See White Paper at p. 66.

difficult to disentangle to determine actual Statewide effects. In assessing whether a “top-down”<sup>21</sup> approach to assessing net effects is warranted in some sectors or areas, the EAG may be able to gain knowledge from other states and jurisdictions that have experience examining net effects from a higher level perspective.

Also, the application of impact evaluation results across the EEPS programs should be addressed. For net savings, impact evaluation results are typically provided in the form of adjustment factors (i.e., net-to-gross ratios) that represent the percentage of the claimed gross, measured and verified, savings which are directly attributable to the program. There are many different ways in which net-to-gross adjustments could be applied and different reasons for doing so, including: 1) whether to adjust reported savings based on the impact evaluation results retrospectively, or prospectively; 2) whether to assess program progress against targets based on adjusted or unadjusted savings; 3) whether to assess the EEPS contribution toward the State’s 15x15 goal by using adjusted or unadjusted savings; and 4) whether and how to apply program evaluation results in future program planning and projections.

Given the weight imparted on evaluation results in the context of future EEPS program funding decisions, NYSERDA recommends that a policy for applying adjustments factors, which consider the variety of program designs that have different net-to-gross impacts, should be developed by the EAG to ensure consistency among PAs and to increase confidence in the overall impacts of programs.

#### Continued Funding Should Be Provided to Support Statewide Studies

NYSERDA supports the continuation of statewide studies and joint evaluation efforts as begun under the current round of programs. However, more definitive budget allocations for such studies should be provided to PAs at the outset of programs to ensure the availability of adequate resources. A mechanism should also be established to ease the administrative burden associated with conducting multi-sponsor studies.

There are currently two types of statewide studies identified to support EEPS: (1) Statewide Protocol/Baseline Studies and (2) Multi-Sponsor Impact Evaluation Studies. In the current program cycle, NYSERDA has volunteered to administer all three Statewide Protocol/Baseline Studies on behalf of the EAG and DPS as a way to simplify and streamline contracting and project management. NYSERDA is willing to continue to serve in this capacity for future Statewide Protocol/Baseline Studies if provided with adequate administrative funding support. Administration and funding levels for the Multi-Sponsor Impact Evaluation Studies will need to be decided once the necessary studies and participants are identified. One study that currently falls into this category regarding utility gas furnace rebate programs, is managed by Con Edison and, appropriately, does not involve NYSERDA due to the

---

<sup>21</sup> Top-down methods rely on energy consumption data or per unit energy consumption defined by sector, utility service territory, state, regional or country. Bottom-up methods generally mean that aggregate energy savings for a program are obtained by summing savings at a more granular level (e.g., individual measure level) within a specific geographic area such as a utility territory. *Reference: LBNL-4265E National Energy Efficiency Evaluation, Measurement, and Verification (EM&V Standard: Scoping Study of Issues and Implementation Requirements April 2011* (<http://eetd.lbl.gov/ea/ems/reports/lbnl-4265e.pdf>)

specific focus. Future studies may involve varying combinations of PAs depending on the programs and measures of interest, and the timing of evaluation needs.

#### Access to Non-Participant Data is Key for NYSERDA Evaluation Efforts

DPS Staff efforts to develop Customer Data Guidelines that permit the use of utility customer energy consumption data in evaluation is an important step toward supporting more rigorous and cost-effective evaluation efforts. Non-participant energy usage data provides highly valuable comparison/baseline information to support analysis of change in energy use by program participants. NYSERDA has, in compliance with the Guidelines, used program participant utility data in many of its impact evaluations and plans to further use such data in support of future evaluation studies. However, the April 2011 revision to the Customer Data Guidelines expanded permission to use non-program-participant data in certain cases only to utility program evaluators and not to NYSERDA. If NYSERDA is not granted equal access to non-program-participant data, its evaluations will be at a significant disadvantage, in both cost and rigor. NYSERDA recommends reconsideration of the April 2011 Customer Data Guidelines so that all PAs have equal access to this essential information.

#### New York's Continued Participation in the EM&V Forum Should Be Appropriately Funded

In March 2009, the Commission established support through the SBC for "Statewide Evaluation Protocol Development" that authorized New York to join the Northeast Evaluation, Measurement and Verification (EM&V) Forum, a project of Northeast Energy Efficiency Partnerships (NEEP).<sup>22</sup> NYSERDA was named the administrator of EM&V Forum activities on behalf of New York.

During its first two full years, the EM&V Forum has completed several work products that have enhanced the State's ability to estimate, track and report the impacts of energy efficiency, demand-side resources and environmental benefits. These efforts provide much value to New York, including the developments of common statewide energy efficiency reporting guidelines, common EM&V methods and assumptions and a net savings scoping document. NYSERDA supports the State's continued participation in the EM&V Forum beyond 2011 and encourages the Commission to provide the necessary financial support to continue these efforts.

### OUTREACH AND EDUCATION

#### OEM Budget Flexibility in Managing Market Response to EEPS Should be Maintained

In keeping with the recent DPS Staff Guidance issued on August 9, 2011, NYSERDA intends to evaluate budget adjustments on a case-by-case basis relative to program performance and current market conditions. This flexible approach affords NYSERDA the ability to most efficiently manage marketing responses.

---

<sup>22</sup> Case 05-M-0090, In the Matter of the System Benefits Charge III, *Order Approving New SBC III Major Funding Category Entitled "Statewide Evaluation Protocol Development"*, issued March 13, 2009. Annual funding up to \$750,000 was authorized for 2009 through 2011.

Further, NYSERDA's OEM efforts target primary audiences and seek to build the sustained level of awareness necessary to drive program participation. Levels of awareness, market penetration, and participation are evaluated on a regular basis to identify shift in budgets and strategy required. In addition, consumers contemplating energy efficiency investment decisions engage in a capital investment decision-making process, making the timing of marketing expenditures a challenge.

NYSERDA believes that the untapped audience for EEPS programs is large and the opportunity significant. Maintaining OEM flexibility to sustain program participation momentum is key to achieving the overall EEPS program targets. The year-over-year program budgeting and the disciplined budgeting approach outlined in the White Paper will ensure that funds are available for the term of EEPS.

#### The Evaluation of OEM Efforts Should Use a Two-Pronged Approach

NYSERDA suggests that a two-pronged approach for evaluating OEM efforts should include both approaches: marketing performance measurement and management (MPM), and evaluation, measurement and verification (EM&V). The combination will enable the collection of marketing intelligence and customer insight in order to maximize the return-on-investment in OEM efforts.

Existing, more formal programmatic EM&V activities do provide insights on OEM efforts and should continue to be used to support the evaluation of OEM efforts. However, the focus, timing, and approach of EM&V studies is designed to address a host of other overall programmatic impacts, but not necessarily designed to assess the effectiveness of OEM efforts. Relying solely on EM&V efforts would be insufficient in assessing the value of OEM efforts.

NYSERDA conducts MPM to help determine the effectiveness of marketing efforts and provides a platform building these insights into marketing campaign design and recalibration.<sup>23</sup> More formal EM&V activities supplement this by querying program participants to uncover how they learned about a program and what triggered participation. Together, these activities can provide a complete picture of the impact of OEM efforts. Appropriate timing of these measurement activities is critical. Benchmarking activities should be conducted prior to campaign launch, and gathering of insights to increase effectiveness and provide opportunities for recalibration should occur during the campaign.

---

<sup>23</sup> As part of the defined marketing business process, program managers outline the desired business outcome and map this to the MPM. NYSERDA's MPM discipline includes the use of a variety of metrics, including: navigational action metrics (reach, frequency, impressions, GRPs, etc.); navigational mental state metrics (awareness, understanding, engagement, etc.); evaluative behavioral metrics (called, clicked, visited, subscribed). When incorporated, these navigational and evaluative metrics will provide insight into the effectiveness of the marketing program elements and enable NYSERDA to shift approach to improve outcome.

## WORKFORCE DEVELOPMENT

### Additional Resources are Needed to Continue the Successful Workforce Development Efforts Supported by EEPS

The June 22, 2009 *Order Authorizing Workforce Development Initiatives* provided \$6.6 million in funding to support a workforce development program.<sup>24</sup> The Order indicated "The fact that we are authorizing a figure lower than requested by NYSERDA, on a one year basis, should not be interpreted as a finding that this sum is sufficient to satisfy all programmatic needs on a long term basis. Rather, as indicated above, it reflects a high likelihood that additional funding will be available from other sources." As directed by the Order, it was anticipated that ARRA funds may be used to supplement workforce development activities. NYSERDA, in cooperation with the Department of Labor, leveraged these funds to increase the likelihood of the State securing ARRA funding<sup>25</sup> through competitive grant opportunities. Unfortunately, NYSERDA/DOL's proposals were not selected for funding. NYSERDA continues to work with partners to seek opportunities to secure additional funding.<sup>26</sup> For example, The Fortune Society leveraged a \$300,000 EEPS Training contract to obtain an additional \$300,000 award from US EPA to provide workforce development and job training services.

The principals identified in the June 2009 Order to support workforce development through System Benefits Charge funding remain valid today. "First is the impact of workforce development investment on quality of efficiency program output. Investments in workforce development are justified when the cost of inferior work quality attributable to an unskilled workforce is greater than the workforce development investment needed to remediate the associated skills gap. Investment in workforce development will contribute toward achieving the goals of the EEPS and minimize the inefficient use of public resources. Although this impact is impossible to quantify with great specificity, the working group identified numerous studies of the efficacy of workforce development, including one which found that training in the proper installation of air-conditioning and heat-pump equipment increased equipment performance by 24% in existing homes and up to 35% in new construction."<sup>27</sup>

The initial EEPS Workforce Development funds have been instrumental in building the State's workforce development and training infrastructure and establishing new training partnerships across the State. NYSERDA plans to meet all training targets under the EEPS, however, these efforts have been limited in

---

<sup>24</sup> Case 07-M-0548, *Order Authorizing Workforce Development Initiatives*, issued June 22, 2009. The Workforce Development proposal sought a total funding request of \$22.255 million.

<sup>25</sup> Proposals were submitted through solicitations SGA/DFA PY-08-20 USDOL Green Jobs Training State Energy Sector Partnership and Training Grant, October 16, 2009, and SGA/DFA PY-10-07, USDOL Green Jobs Innovation Fund, February 23, 2011.

<sup>27</sup> An example from the renewable energy sector shows a study of early NYSERDA PV installations by Research Into Action demonstrated that certified PV installers had fewer problems at time of system inspection than those of noncertified installers, a result that was statistically significant.

scope and market penetration, focusing on establishing new curriculum, enhanced union trades programs, online training platforms, and internship support.<sup>28</sup>

In a recent Brookings Institute study, *Sizing the Green Economy: A National and Regional Green Jobs Assessment*<sup>29</sup>, New York State ranked second in the nation in terms of the number of clean energy jobs and, echoing trends from 2003-2010, the demand for certified installers and technicians continues to grow. Reiterated in the United States Department of Labor-funded Labor Market Intelligence report<sup>30</sup>, the New York State Department of Labor (NYS DOL) found that, among building trades and professional services firms that serve the green sector, more than 25% anticipate the need to hire credentialed employees in the next year. The NYS DOL also found that credentials are critical to employability with employers seeking nationally recognized certifications including, but not limited to, those issued by the US Green Building Council and the Building Performance Institute.

Additionally, based on discussions with contractors participating in focus groups conducted by NYS DOL, there is a reported shortage of entry-level certification training, energy efficiency training integrated in advanced degree programs and certified workers in the energy efficiency, building performance, and weatherization fields. Employers are also seeking entry level employees, such as those served under the Career Pathways for Disadvantaged Workers Program, who have credentials and hands-on experience that demonstrate a basic competency in the energy efficiency sector. Often referred to as “stackable credentials,” new entrants to the workforce need a foundation from which they can build upon through on-the-job training and advanced technical training. Existing workers also require new skills development in order to effectively implement and realize savings benefits. To accomplish these goals, additional funds are needed to help contractors and practitioners adapt to changes in technologies, new energy efficiency practices and standards, and to maintain or update certifications.

Important drivers affecting the State’s economic vitality are: aging population; slowing population growth among younger workers; more immigration; increasing skills requirements for workers; State and local economic instability; and the end of ARRA investments. These drivers directly affect the labor needs of the manufacturers, employers, and service organizations supporting goals of the EEPS. Employers and electric customers participating in EEPS programs, require existing workers to upgrade their skills, maintain certifications, obtain new certifications, and develop new skills in advanced technologies. For example, as the home performance industry has matured, the Building Performance Institute (BPI) has created new standards to address new job skills, such as the Home Energy Auditing standard due for release in Summer 2011. BPI is also planning to release new standards to support Program needs, such as the *Standard Practice for Basic Analysis of Buildings for Diagnostic Tester*, and the *Standard for Residential Building Field Inspections* which supports programs that require jobs to be field inspected by third-parties to verify measures are installed properly. New job requirements and related certifications

---

<sup>28</sup> The September 22, 2008 NYSERDA proposal included a budget of \$22.255 million to support the training needs of 18,780 participants over three years, assuming a total funding level of \$33 million, including an anticipated \$11 million dedicated by the Department of Labor.

<sup>29</sup> A full copy of *Sizing the Green Economy: A National and Regional Jobs Assessment* can be found at: [http://www.brookings.edu/reports/2011/0713\\_clean\\_economy.aspx](http://www.brookings.edu/reports/2011/0713_clean_economy.aspx).

<sup>30</sup> NYS DOL LMI study found here: <http://www.labor.ny.gov/stats/green/index.shtml>.



have been established in the commercial sector as well, such as the Building Commissioning Association (BCA) Certified Commissioning Professional (CCP), and U.S. Green Building Council LEED professional accreditations. Other relevant credentials include Association Energy Engineers (AEE) Certified Energy Manager, NCQLP Lighting Certification, USGBC Leadership in Energy and Environmental Design Accredited Professional (LEED AP), North American Technician Excellence (NATE) HVAC certification, and National Association Energy Service Companies (NAESCO) certifications in HVAC and building envelope.

The demand for high performing energy-efficient buildings is increasing under EEPS, and with the enactment of local legislation such as NYC Local Law No. 87 that requires energy audits, and retro-commissioning of buildings greater than 50,000 square feet. These initiatives will require increases in the skill and number of workers who are trained to provide energy efficiency services. For example, there is a growing need for qualified commissioning authorities to lead the retro-commissioning process that can improve the energy performance of existing buildings, and for qualified building operators that can operate central plant and control systems for smarter buildings. New EEPS funded training initiatives will focus on the education needs for new and existing workers responsible for the effective application of energy efficiency technologies (HVAC, advanced lighting, controls) and building systems, building performance, weatherization and energy auditing fields.

NYSERDA evaluation efforts will assess the degree to which the current training efforts have addressed market needs among energy efficiency services industry employers, and the awareness and knowledge gained by participants. Early surveys of participating contractors show that more field experience and on-the-job training is needed, as well as increased access to equipment needed for home energy audit and commercial energy auditing. The cost of obtaining work experience is high for both worker and employer, yet NYS DOL Labor Market Intelligence research suggests that OJT is an important training requirement across the entire weatherization career ladder. New training partnerships are needed with trade union training centers, manufacturers, and professional associations to improve regional access to training and testing facilities. For example, advanced lighting controls training administered through the IBEW Joint Apprenticeship and Training Committee (JATC) training centers will help ensure EEPS lighting projects are installed, operated, and maintained as specified. Based on the development of a standard certification for advanced lighting controls, the training will be instrumental in assisting the industry with realizing tremendous energy saving potential from advanced lighting controls versus the current state of installations, the types of technical problems often encountered in installations, and the cost impact this has for building owners. It is expected that this training will result in more competitive bids for jobs, increased vendor sales, and more satisfied building owners and program administrators. NYSERDA's vision is to make this a statewide effort in New York involving electric utilities, community colleges, and the IBEW and National Electrical Contractors Association (NECA). The ultimate goal is to develop a statewide certification, in collaboration with early efforts currently underway in California, based on a consensus standard for advanced lighting control.

Technical training for commercial/industrial programs such as Building Operator Certification training should be integrated with commercial projects to help ensure building operator knowledge and skills competencies in operating and maintaining energy efficient equipment for large commercial and institutional properties. Programs can be integrated into existing high school vocational and career technology education (CTE) and continuing education programs for new and incumbent professionals in the energy efficiency sector. One such example is the \$33,000 award for Capital Region BOCES new 350 hour HVAC program within the Continuing Education department. The students earned nationally-recognized certifications that increased their employment and earning potential, including one 2004 high school graduate from Troy, enrolled in the program in August, 2010. Soon after graduation, he was hired by Global Foundries in Malta. This is one of the many examples of how worker training directly aligned with employer needs helps to ensure that workers have the skills and knowledge to achieve and maintain energy savings benefits of EEPS funds.

The aggressive goals of the EEPS will require a readily-available pool of qualified workers to install, operate, and maintain energy efficiency measures. This workforce can minimize barriers to program implementation and ensure that sustained, long-term energy savings gained through the EEPS programs are realized. Many EEPS-funded programs will require that individuals that can demonstrate a specific competency level and will require continued training to maintain competency levels and more importantly to learn new skills. To support the increased demand for new and existing workers installing, operating, and maintaining energy efficiency technologies and building systems, NYSERDA anticipates a funding level akin to its initial filing of approximately \$6.5 million per year.

#### NYSERDA CORRECTIONS TO WHITE PAPER OUTLIER TABLE AND APPENDIX 1

In keeping with the DPS methodology used in the original tables, NYSERDA believes that the figures included in the Analysis of Outlier Tables (see White Paper, page 19) and the Appendix 1, Tables 1(a) and 1(b) were stated in error. Therefore, NYSERDA provides the following suggested revisions.

The table below identifies revisions to the Analysis of Outliers Tables.

### Analysis of Outliers Tables (page 19)

<b>Electric Program –Outliers</b>							
<i>Sector</i>	<i>Program</i>	<i>Percent of Net MWh Target Acquired in 2010</i>	<i>Percent of Budget Spent in 2010</i>	<i>Percent of Prorated Net MWh Target Acquired in 2011</i>	<i>Percent of Prorated Budget Spent in 2011</i>	<i>2010 Dollars Spent per MWh Acquired</i>	<i>Approved Budget per MWh Target</i>
C&I	Existing Facilities Program	298.0%	209.0%	240.4%	207.9%	\$168	<del>\$239</del> <b>\$182</b>
C&I	New Construction Program	10.3%	22.1%	15.8%	43.9%	\$1,461	<del>\$680</del> <b>\$256</b>
C&I	Benchmarking and Operations Efficiency	0.0%	1.0%	0.0%	0.1%	NA	<del>\$423</del> <b>\$198</b>
<b>Gas Program - Outliers</b>							
<i>Sector</i>	<i>Program</i>	<i>Percent of Net Dekatherm Target Acquired in 2010</i>	<i>Percent of Budget Spent in 2010</i>	<i>Percent of Net Dekatherm Target Acquired in 2011</i>	<i>Percent of Budget Spent in 2011 to date</i>	<i>2010 Dollars Spent per Dekatherm Acquired</i>	<i>Approved Budget per Dekatherm Target</i>
C&I	New Construction Program	0.0%	8.5%	0.0%	17.7%	N/A	<del>\$18</del> <b>\$15</b>
<b>NOTE:</b> The struck number is from the White Paper and the red number is NYSERDA's corrected number. Note also that the column labeled "Approved Budget per MWh/Dth Target" represents total approved budgets (including administration and evaluation) and total MWh/Dth approved in Orders to date.							

As Appendix Tables 1a and 1b represent a single-year forecast of savings to be achieved, that at the time the White Paper was developed was based on actual achievements through February 2011, NYSERDA welcomes the opportunity to provide this more current information. The Tables below identify revisions to Appendix 1, Tables 1a and 1b:

### Appendix 1, Table 1a Forecast Electric Savings vs. Goals

	<b>Program Administrator</b>	<b>Portfolio 2011 MWh Target</b>	<b>MWh Forecasted to be Achieved in 2011</b>	<b>Forecast of Percent Achieved</b>
White Paper:	NYSERDA	876,855	922,852	105%
NYSERDA Revision:	NYSERDA	876,855 (See note 1)	558,010 (see note 2)	64%
<b>Note 1:</b> This number reflects Order targets for 2011, without accounting for the lag between commitments and installation as presented in Operating Plans filed by NYSERDA. This number also does not include additional targets authorized in the December 30, 2010 <i>Order Continuing Systems Benefit Charge Funded Programs</i> .				
<b>Note 2:</b> This number represents the forecasts provided to Staff in April and May, 2011, which were developed in March and April, 2011, and only accounts for acquired, but not committed, savings.				

## Appendix 1, Table 1b Forecast Gas Savings vs. Goals

	Program Administrator	2011 Calendar Year Dth Target	2011 Dth Forecasted to be Achieved	Forecast of Percent Achieved
White Paper:	NYSERDA	1,936,875	911,289	47%
NYSERDA Revision:	NYSERDA	1,936,875 (See note 1)	987,956 (see note 2)	51%
<b>Note 1:</b> This number reflects Order targets for 2011, without accounting for the lag between commitments and installation as presented in Operating Plans filed by NYSERDA.				
<b>Note 2:</b> This number represents the forecasts provided to Staff in April and May, 2011, and only accounts for acquired, but not committed savings.				

Consistent with DPS' recommendation stated in the White Paper to count savings in the year that funds are committed to a project, showing the forecasts in terms of current achievements, plus commitments, represents a more complete picture of progress to-date. Also, as DPS Staff indicated in their Response, Appendix Table 1a and 1b represent a single-year forecast of savings to be achieved, which at the time the White Paper was developed was based on actual achievements through February.

The Table below reflects NYSERDA EEPs Electric program installations and commitments as of June 2011:

Program	2011 Installed MWh Savings (Jan- Jun)	2011 MWh Commitments (as of June 2011)	Total MWh Installed plus Commitments through June 2011	Portfolio 2011 MWh Target	Total through June 2011 as % of Portfolio 2011 MWh Target
NYSERDA EEPs Electric Portfolio	333,696	567,354	901,050	876,855	103%

The Table below reflects NYSERDA EEPs Gas program installations and commitments as of June 2011:

Program	2011 Installed Dth Savings (Jan- Jun)	2011 Dth Commitments (as of June 2011)	Total Dth Installed plus Commitments through June 2011	Portfolio 2011 Dth Target	Total through June 2011 as % of Portfolio 2011 Dth Target
NYSERDA EEPs Gas Portfolio	439,593	1,236,382	1,675,974	1,936,875	87%

NYSERDA also notes the value of assessing progress to-date in light of the pace of spending as well as achievements. As of June 2011, NYSERDA has acquired or committed to acquire 51% of its total electric programs MWh goal, while spending or committing to spend 48% of its total approved funds. For the gas programs, NYSERDA has acquired or committed to acquire 45% of its total gas programs

Dth goal, while spending or committing to spend 37% of its total approved funds. If ancillary Dth acquired through the electric programs are included in the gas totals, then 61% of the total gas programs Dth goal has been achieved or committed.

### NYSERDA CORRECTIONS TO APPENDIX 3

NYSERDA suggests corrections, clarifications and updates be made to the inventory of completed and in-progress evaluation projects shown in Appendix 3 of the White Paper, to more accurately represent current evaluation progress. NYSERDA will provide these suggestions to DPS Staff separately from these comments. Due to the evolving nature of evaluation projects and their associated timelines, NYSERDA recommends that, as changes in the evaluation schedule occur over time, PAs communicate any such changes to DPS Staff.